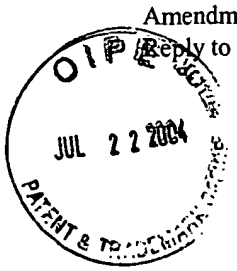
2661



PATENT
Attorney Docket No. 131*198

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on this **19th** day of **July, 2004**.

James M. Olsen
(Printed name of person mailing paper)

James M. Olsen
(Signature of person mailing paper)

In re Application of:

Xiang-Gen XIA

Serial No.: 09/658,184

Filed: September 8, 2000

For: PRECODED OFDM SYSTEMS ROBUST TO SPECTRAL NULL CHANNELS AND VECTOR OFDM SYSTEMS WITH REDUCED CYCLIC PREFIX LENGTH

Group Art Unit: 2661

Examiner: Robert W. Wilson

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

AMENDMENT

In response to the Office Action dated April 19, 2004, please amend the application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 3 of this paper.

Remarks begin on page 6 of this paper.

Amendments to the Specification

Please replace the paragraph on page 18, lines 11-18 with the following amended paragraph:

The vector OFDM systems comprise the precoded systems shown in Fig. 2 with a special precoder $G(z) = I_{KxK}$ that blocks the input data into K x 1 vectors so that the data rate is not changed, i.e., no redundancy is added. In other words, the precoder of Equation (4.4) in the precoded OFDM systems takes the squared identity matrix, i.e., $M = K$ in Equation (4.4). Similar to Equation (4.21), the vector cyclic prefix data rate overhead is:

$$\frac{K(N+\tilde{\Gamma})}{KN} \approx \frac{N+\frac{L}{K}}{N}. \quad \frac{K(N+\tilde{\Gamma})}{KN} \approx \frac{N+\frac{L}{K}}{N}. \qquad (5.1)$$

Compared to the data rate overhead $(N + L)/N$ for the conventional OFDM systems, the data rate overhead in the vector OFDM systems is reduced by K times, where K is the vector size.